

ABSTRACT

**CELLULAR LABELING FOR NUCLEAR MAGNETIC RESONANCE TECHNIQUES**

The disclosure provides, in part, fluorocarbon imaging reagents and formulations for the *ex vivo* labeling of cells. Labeled cells may be detected *in vivo* or *ex vivo* by a nuclear magnetic resonance technique, such as magnetic resonance imaging (MRI) or magnetic resonance spectroscopy (MRS). The disclosure additionally provides methods for using the imaging reagents in a variety of clinical procedures.